



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

01-AFC-20

CALIF ENERGY COMMISSION

OCT 31 2002

RECEIVED IN DOCKETS

October 10, 2002

Mr. Seyed Sadredin
Director of Permit Services
San Joaquin Valley Unified APCD
1990 East Gettysburg Avenue
Fresno, CA 93726-0244

Re: EPA Comments on Notice of Preliminary Determination of Compliance (PDOC)
for Avenal Energy Project (01-AFC-20), Project Number C1011324

Dear Mr. Sadredin:

Thank you for the opportunity to review the Preliminary Determination of Compliance ("PDOC") for the Duke Energy Avenal project located in Kings County. Enclosed are our comments. EPA provided these comments to Mr. Errol Villegas of your staff on August 9, 2002.

If you have any questions, please call me, or have your staff contact Mark Sims of my staff at (415) 972-3965.

Sincerely,

Gerardo C. Rios, Chief
Air Permits Office

Enclosure

cc: Mr. Errol Villegas (SJVUAPCD)
Mr. Lance Shaw (CEC)
Mr. Wayne Hoffman (Duke Energy)

PROOF OF SERVICE (REVISED 10/31/2) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 10/31/2

ENCLOSURE

EPA Comments: Avenal Energy Project (01-AFC-20) Preliminary Determination of Compliance

ERCs

1. Pre-1990 or Nontraditional Source ERCs

SJVU did not submit enough information with the PDOC Notice for EPA to determine whether any of the ERCs came from nontraditional sources or are pre-1990 ERCs. We have the following concerns about these types of ERCs:

- Nontraditional Sources: ERCs cannot be used until federally enforceable rules and protocols are in place for the source categories from which the ERCs were generated.
- Pre-1990 ERCs: If Duke proposes to use pre-1990 ERCs for this project, these ERCs must meet the requirements of EPA's 1994 "Response to Request for Guidance on Use of Pre-1990 ERCs and adjusting for RACT at Time of Use." We commented extensively on this same issue for the PDOC for San Joaquin Valley Energy Center - Project C1011446. (See our May 6, 2002, * comment letter.) The same San Joaquin Valley Energy Center ERC issues may apply to this project. * (This document is being docketed w. The Avenal project based upon its reference here.)

2. Interpollutant Offsets (SO_x for PM₁₀ at 1.9:1; VOC for NO_x at 2.5:1)

EPA's modelers are currently reviewing the information submitted in the PDOC Notice to verify the validity of the proposed interpollutant offsets. We will continue to work with the District on this issue.

BACT/LAER for VOCs

There seems to be a typographical error on page 52 of the Determination of Compliance Evaluation (Proposed Rule 2201 DEL Conditions) where the District states that the VOC emission rate without duct burner firing is 2.0 ppmvd. EPA believes that the VOC emission limit without duct burner firing on page 52 of the Determination of Compliance Evaluation should be changed to 1.4 ppmvd, since the proposed VOC emission rate without duct burner firing for this project is 1.4 ppmvd.

Source Testing

1. It is not clear to EPA why the District is proposing to conduct source testing to measure startup NO_x, CO, and VOC emissions prior to the end of the commissioning period and at least once every seven years thereafter for only one of the two turbines. EPA recommends that these "startup" source testing requirements apply to both turbines (Attachment A, Condition 45). EPA also recommends that startup testing for PM₁₀ be conducted.
2. HAPs – although the PDOC states that the Avenal Energy Project will not be a major source for air toxics, it is not clear to EPA why the PDOC does not contain conditions requiring HAPs emissions testing.

Commissioning Requirements

We are currently reviewing commissioning requirements for inclusion into the federal Prevention of Significant Deterioration of Air Quality ("PSD") permit. We intend to complete this review soon and once done, we will consult with you concerning specific commissioning conditions for the PSD and District permits.

Definition of Startup (Condition 36)

"Startup" as defined in Attachment A, pgs. 6 & 15, condition 36, is too broad. "Startup" is defined as the period beginning with the initial firing of the turbine and ending when the turbine meets lb/hr and ppmvd emission limits in Condition 38.

The permit conditions could allow excess emissions during a malfunction to be excused as a "startup." The definition of "startup" should be narrowed to exclude those periods after initial firing when a turbine cannot meet condition 38 emission limits because of malfunctions or other operational problems.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901
May 6, 2002

DOCKET 01-AFC-22
DATE <u>MAY 06 2002</u>
RECD. <u>MAY 09 2002</u>

Mr. Seyed Sadredin
Director of Permit Services
San Joaquin Valley Unified
Air Pollution Control District
1999 Tuolumne Street, Suite 200
Fresno, CA 93721

*This document is
referenced in EPA
comment letter for
Avenal Project (01-AFC-20)
dated 10 Oct. '02.*

**Re: Preliminary Determination of Compliance for San Joaquin Energy Center -
project C1011446**

Dear Mr. Sadredin:

I am writing to you concerning the Preliminary Determination of Compliance (PDOC) for the proposed San Joaquin Energy Center. We appreciate the opportunity to comment on the PDOC for this project, and would like to thank your staff for all the help and information they provided during our review of this project.

We have several comments on the proposed EPA Lowest Achievable Emission Rate/District Best Available Control Technology recommendations, which are explained in the enclosure. We also recently received background information on several of the proposed Emission Reduction Credits. We recommend that the District require the substitution of other credits for the proposed pre-1990 credits until several requirements necessary to protect air quality and allow the use of pre-1990 credits have been met. We recommend that the District revise the PDOC based on these recommendations before issuing a final Determination of Compliance, and look forward to working with you during the completion of the permitting process. If you have any questions, please contact me or have your staff contact Ed Pike of my staff at (415) 972-3970.

Sincerely,

Gerardo C. Rios
Chief, Permits Office

Enclosures

cc: Robert Lamkin, San Joaquin Energy Center
Matt Trask, CEC
Mike Tollstrup, CARB

Enclosure

U.S. EPA Comments on the Preliminary Determination of Compliance for San Joaquin Valley Energy Center

1. BACT/LAER for Gas Fired Turbines:

Nitrogen Oxides (NOx)

We concur with the District's decision to revise the California Best Available Control Technology (BACT)/ federal Lowest Achievable Emission Rate (LAER) from 2.5 ppmvd NOx to 2.0 ppmvd averaged over one hour in the final PDOC (as explained by District staff on 4/29/2002). Facilities in the San Joaquin Valley and other California Districts and other States have been permitted at this emission rate. In addition, two units in Massachusetts have been operational since 2001 with an emission limit of 2.0 ppmvd, excluding start-up and shut-down conditions (ANP Blackstone #1 and #2). Please let us know if you would like a copy of the data for these two units (which is also available on EPA's website), and please provide us with a copy of any request for an exemption from the 2.0 ppmvd limit outside of commissioning and start-up/shut-down periods. We would also like to note that a 5 ppm ammonia slip level or less is required at these two operational units and many of the other units permitted at 2.0 ppmvd NOx.

Volatile Organic Compounds (VOC) and Carbon Monoxide (CO)

We understand that the VOC emission and offset calculations for this project were based on emissions of 1.4 ppmvd, with the exception of 2.0 ppmvd when duct burners are operational. As we have discussed with District staff, a lower VOC emission limit and associated sources testing is necessary to enforce this limit in the final PDOC. We understand that the District will be revising the permit to address this concern.

We believe that the evaluation must also include 2.0 ppm CO, based on the use of an oxidation catalyst as proposed. For instance, Morro Bay was permitted at 2.0 ppm CO over a three-hour averaging time, and several Massachusetts power plants were permitted at 2.0 ppm CO over a one-hour averaging time. We have also received test reports showing CO emissions at ANP Blackstone, which was permitted at 3.0 ppm CO operating well within their emission limit (with actual emissions less than 1 ppm CO). We understand that the District will be expanding the evaluation to consider CO emission limits less than the 4 ppm currently proposed by the applicant.

2. San Joaquin Valley Air Quality and Pre-1990 Emission Reduction Credits

Background

We appreciate the ERC information that the District provided to us in the past week regarding several emission reduction credits. During our initial review, we have

provided an approvable attainment plan with enough additional reductions to allow the use of these credits and still achieve attainment. The latest list that we received from the District indicates that over 11,000 tons per year of pre-1990 credits have been issued.³

In addition, when reviewing the Draft 2002 and 2005 Rate of Progress Plan (scheduled to be adopted by the Board on May 16, 2002), we could not identify pre-1990 emissions reductions credits that were explicitly included in the Rate of Progress Plan emission inventories⁴. If you believe that any credits were explicitly included as emissions growth in that draft plan, please help us identify where these credits are identified and included in the inventory.

Current Effect of EPA's August 26, 1994 policy on Pre-1990 ERCs

We believe that the use of pre-1990 credits by Calpine would not comply with federal offset requirements unless and until the District explicitly includes these credits in their planning inventories as required to achieve the NAAQS and protect public health. In the meanwhile, we believe that the rest of the nearly 33,000,000 pounds of ozone precursor credits (currently listed in the District's ERC registry), EPA's recently removal of offset sanctions, and current efforts by the District and EPA to help develop innovative offsets will help provide an adequate supply of credits in the District. Since many power plant projects are "on hold" and this project may not be operational for several years, it may be possible for Calpine to re-apply for the use of these credits if the District eventually meets the requirements of EPA's August 1994 policy for the use of pre-1990 ERCs.⁵

3. Source Testing

Director's Discretion

The permit allows director's discretion to change the source testing methods listed in the permit. We strongly recommend removing this provision, because the source must use approved test methods to demonstrate compliance with the emission limits in the permit. The facility may be unable to show that they comply with LAER and other emission limits if they utilize a less strict source test method that has not been approved by EPA.

³See list included as Appendix D to the District's 1996 Rate of Progress Plan. The District listed which ERCs were listed before 1990, but they were not explicitly included in the plan as emissions growth. We are aware that the total is not exact because some credits may no longer be included in the bank, and other pre-1990 credits were not included on the District's list of pre-1990 credits.

⁴See table 3-1, enclosed, dated 4-17-2002.

⁵We also recommend clarifying in condition 16 that offsets must be provided before implementing any of the projects. The current language requires providing offsets upon implementation of all of the emission units at the source, which may not all be constructed.

8. Trading PM10 for PM10 Precursors

While EPA reviews interpollutant trading on a case-by-case basis, we have been informed by the California Energy Commissions that the facility will be using PM10 credits instead of interpollutant trading due to the end of offset sanctions. Therefore, we have not reviewed this proposed trade, but request that the District continue to identify proposed interpollutant trades for case-by-case review.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 19, 2000

Mr. Seyed Sadredin
Director of Permit Services
San Joaquin Valley Unified
Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726-0244

**Re: Preliminary Determination of Compliance for Pastoria Energy Facility
(project 991233)**

Dear Mr. Sadredin:

I am writing to you concerning the Preliminary Determination of Compliance (PDOC) for the proposed Pastoria Energy Facility. We appreciate the opportunity to comment on the PDOC for this project, and would like to thank your staff for all the help and information they provided during our review of this project.

We have a number of comments which are explained in Enclosure 1. We are asking the District to address our concerns and comments before issuing a final Determination of Compliance. We look forward to working with you to address our comments prior to the issuance of the final Determination of Compliance. If you have any questions, please contact me or have your staff contact Ed Pike at (415) 744-1211.

Sincerely,

SLH for

Matt Haber
Chief, Permits Office

Enclosures

cc: Magdy Badr, CEC
Joan Heredia, URS Greiner Woodward Clyde
Ray Menebroker, CARB
Sam Wehn, Pastoria Energy Facility

ENCLOSURE 1

EPA Comments on Pastoria Energy Facility Preliminary Determination of Compliance (Draft 6-15-2000)

1) Offsets

A) NO_x Emission Reduction Credits (ERCs):

As we have discussed in the past, EPA requires that the District only allow the use of pre-1990 ERCs if they are explicitly included as growth in the emission inventories used for your attainment plans and reasonable further progress plan (RFP)¹. We understand that NO_x ERC #S-825-2 (used for interpollutant trading for PM₁₀) is based on pre-1990 reductions. In addition, many of the reductions used to generate Chevron NO_x ERC #C-311 occurred before 1990 (according to table 3 of the District's 1999 evaluation for project 960852).

We understand that the District has included general growth factors in your attainment plan, but has not explicitly included pre-1990 ERCs as current emissions in the attainment plan and has not explicitly included the ERCs as growth in the rate of progress plan. This approach does not demonstrate that growth due to the use of pre-1990 ERCs is included in addition to increases from other sources (such as area and minor sources). Therefore, these emissions can exceed the emissions accounted for in the current attainment plan and rate of progress plan (which are based on a 1990 emissions inventory). Because EPA has proposed to "bump up" the San Joaquin Valley, a new plan and inventory will be required. EPA's acceptance of the proposed ERCs as valid credits is premised on the District's commitment, via its response to these comments, to include these and any other pre-1990 ERCs it would like to make available for use by major sources in the new inventory as growth.

B) SO_x ERCs:

We understand that three SO_x ERCs (S-259-5, now S-1344-5; S-257-5, now S-257-5; S-56-5, now S-1336-5) were generated based on reductions that occurred in 1991 or 1992, which is before the 1993 emissions inventory date for the District's most recent PM₁₀ attainment plan. Because these "pre-baseline" ERCs do not appear to be explicitly included in the 1993 emission inventory and the RFP, the use of these credits could hinder future attainment of the PM₁₀ National Ambient Air Quality Standards. As noted in our the August 30, 1999 letter on the Sunrise Cogeneration project, the District needs to ensure that pre-baseline ERCs are appropriately included in the PM₁₀ attainment plan and the RFP before allowing their use.

¹Please see "Response to Request for Guidance on Use of Pre-1990 ERC's and Adjusting for RACT at Time of Use", dated August 26, 1994, from John Seitz to David Howekamp.

C) Seasonal Credits:

The permit currently contains an annual emissions limit, while the District offset rule is based on quarters. We recommend limiting summer quarter emissions of ozone precursors to the quantity of offsets provided for the summer quarter. We also recommend limiting the winter time emissions of PM₁₀ and PM₁₀ precursors to the amount of winter quarter offsets provided for those pollutants.

D) Use of NO_x ERCs to mitigate PM₁₀ emissions:

While we are accepting the District's evaluation for this project, we would like to note that all emission trades of this type (including any future trades) must also be supported by a case-by-case evaluation. Please see our prior comments on your PDOCs on La Paloma (April 30, 1999) and Elk Hills (January 14, 2000) for more information on EPA's position on trades of this type.

2) Air Toxics

As we have discussed with District staff, EPA recently published a Federal Register notice clarifying that gas turbines with the potential to emit 10 tons of any HAP (including formaldehyde) or 25 tons of total HAPs are subject to a case-by-case air toxics review under section 112(g) of the Clean Air Act. We understand that Pastoria Energy Facility intends to install emission controls that will limit them to less than major source HAP levels. Therefore, the permit must contain enforceable emissions limits on HAP emissions from the source.

In addition, the permit must require source testing. This is especially important due to the uncertainty over whether existing emission factors are accurate for a source that uses XONON or an add-on catalytic oxidizer. One option suggested by the applicant is using the annual VOC source testing as a surrogate for HAPs in lieu of annual HAP testing. EPA would agree to this approach when annual VOC testing shows that total VOCs are so low that no HAP testing is necessary (some District VOC tests of gas turbines have shown virtually no VOC emissions). On the other hand, when VOC testing shows that HAP levels may exceed the major source levels, we believe that additional future HAP testing will be necessary.

3) BACT evaluation

We appreciate the District's inclusion of SCONOX in the control technology evaluation as an alternative to SCR, which we had requested in our comments on the PDOC for Elk Hills. This evaluation states that the Federal facility is not in the same "class and category" as the larger Pastoria Energy Facility. We would like to point out that, while we have not made a determination of whether a 1 ppm NOX is achieved in practice for the Federal facility identified in your evaluation, we believe that these two sources would fall within the same class or category of sources. We have enclosed our August 29, 1988 guidance memo entitled "Transfer of Technology in Determining Lowest Achievable Emission Rate" (Enclosure 2), which explains that the emission stream characteristics are the appropriate basis for determining whether two sources fall within the same class or category. We also recommend that the District's evaluation consider

the latest information submitted by ABB on April 12, 2000 and the CEC's Final Staff Assessment for Elk Hills².

As the District has documented in your evaluation of PM₁₀ offset requirements, ammonia can react in the atmosphere to form PM₁₀. The District has proposed an ammonia slip limit of 10 ppmvd. However, we strongly recommend that the District tighten this limit to 5 ppmvd if SCR is chosen as the alternative to XONON. According to the CARB's Power Plant Guidance, at least two power plants in Massachusetts using SCR have been permitted at a 2 ppmvd limit. Further, several SCR manufacturers, including Mitsubishi and Engelhard, have now guaranteed 5 ppmvd ammonia slip. Therefore, the Guidance suggests an ammonia slip of 5 ppmvd. Based on the available information, we agree with the CARB's Guidance that the ammonia slip limit should be set at least as low as 5 ppmvd.

4) Start-up and Shut-down conditions

We recommend that the District require testing of PM₁₀ start-up and shut-down emissions at the same time that source testing is conducted for other pollutants. We would also like to note that the CEMs should be capable of monitoring the higher emissions that may occur during start-up and shut-down. In addition, we believe that the CEMs can, and should, sample often enough during these time periods to accurately quantify emissions during these start-up and shut-down.

5) Analysis of Alternative Sites, Sizes, and Processes

This section of the preliminary determination of compliance evaluation (p 36) lists benefits described by the applicant, but does not contain an independent evaluation by the District. We understand that the California Energy Commission intends to conduct a review of alternate sites, sizes, and processes, that the District may be able to rely on. We recommend that the District include or reference this evaluation, unless the District intends to perform a separate evaluation.

² p.33 in part 3 of the FSA, which is dated April 28, 2000



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

August 29, 1988

MEMORANDUM

SUBJECT: Transfer of Technology in Determining Lowest Achievable Emission Rate (LAER)

FROM: John Calcagni, Director
Air Quality Management Division (MD-15)

TO: David Kee, Director
Air and Radiation Division, Region V

This is in response to your memorandum of August 9, 1988, requesting guidance on the transfer of control technology between source categories for the purpose of determining LAER for a source. This issue was raised by the Michigan Department of Natural Resources in proposing that the control achieved by incineration of oven and spray booth emissions from a truck parts surface coating line (which is considered to be miscellaneous metals) should also be achievable by an automobile surface coating line. You stated that the policy set forth in the January 16, 1979 Federal Register (page 3280) would appear to support this position; however, the sentence at the end of the citation, "Comments on this interpretation and whether it is appropriate to revise the regulatory definition are solicited," suggests that the Environmental Protection Agency might have changed its policy since that time.

This is to reaffirm the policy stated in the January 16, 1979 Federal Register. Our quick investigation of the regulatory history since the publication of that policy indicates that no comments were ever received on that issue. Consequently, the policy has never been revisited. Furthermore, we interpret the last sentence you cited to mean that we would consider whether to redefine LAER to clearly reflect policy, not that we would change the policy on transfer of control technology.

There are two types of potentially transferable control technologies: 1) gas stream controls, and 2) process controls and modifications. For the first type of transfer, we consider the class or category of sources to include any sources that produce similar gas streams that could be controlled by the same or similar technology. The process that generates a volatile organic compound (VOC) laden gas stream, for example, is immaterial. What matters is whether the gas stream characteristics, such as composition and

in gas stream VOC concentrations so low that incineration of the gas stream is not considered feasible in terms of LAER. However, it is acceptable to consider composition from one source, application technology (transfer efficiency) from another source, and incineration from a third source when performing a LAER determination, as long as each of those sources meets the control technology transfer criteria discussed above.

If you have further questions regarding transfer of technology in LAER determinations, please contact Gary McCutchen at FTS 629-5592.

PROPOSED 2002 AND 2005 RATE OF PROGRESS PLAN

Table 3-1

Recalculated 1990 Base Year Emissions Inventory, 1999 Emissions Inventory, and 2002, and 2005 Projected Planning Emissions Inventory (tons/day)

Source Categories	1990* VOC	1999 VOC	2002 VOC	2005 VOC	1990* NOx	1999 NOx	2002 NOx	2005 NOx
STATIONARY SOURCES								
FUEL COMBUSTION								
Electric Utilities	0.1	0.1	0.1	0.1	1.9	3.1	3.2	3.4
Cogeneration	0.3	0.3	0.3	0.3	7.5	11.5	10.3	10.3
Oil and Gas Production (Combustion)	6.9	5.3	5.3	5.5	165.9	47.3	25.4	25.9
Petroleum Refining (Combustion)	0.1	0.1	0.1	0.1	5.3	1.5	1.4	1.4
Manufacturing and Industrial	0.3	0.3	0.3	0.4	43.3	36.1	34.6	36.1
Food and Agricultural Processing	3.1	3.1	3.1	3.1	51.9	47.4	47.2	47.4
Service and Commercial	1.3	1.2	1.3	1.4	28.1	13.5	13.9	15.1
Other (Fuel Combustion)	0.3	--	--	--	1.6	--	--	--
TOTAL FUEL COMBUSTION	12.4	10.4	10.6	10.9	305.4	160.6	136.0	139.5

SJVUAPCD

**Chapter 3 - Emission Inventory and
Baseline Projections**

04/17/02

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PROPOSED 2002 AND 2005 RATE OF PROGRESS PLAN

TOTAL CLEANING AND SURFACE COATINGS	27.7	30.8	32.8	34.4	0.0	--	--	--
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PETROLEUM PRODUCTION AND MARKETING								
Oil & Gas Production	91.8	32.4	32.4	32.7	0.1	0.2	0.2	0.2
Petroleum Refining	4.1	1.3	1.3	1.3	0.8	0.1	0.1	0.1
Petroleum Marketing	8.9	5.4	5.5	5.5	--	0.0	0.0	0.0
Other (Petroleum Production and Marketing)	0.8	0.0	--	0.0	--	--	--	--
TOTAL PETROLEUM PRODUCTION AND MARKETING	105.6	39.0	39.2	39.4	0.9	0.3	0.3	0.3
INDUSTRIAL PROCESSES								
Chemical	4.5	1.8	2.0	2.1	0.1	0.1	0.1	0.1
Food and Agricultural	9.6	10.6	11.1	11.4	9.3	9.3	9.3	9.3
Mineral Processes	0.4	0.3	0.3	0.3	4.1	1.5	1.5	1.5
Metal Processes	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Wood and Paper	-	0.0	0.0	0.0	--	0.0	0.0	0.0

SJVUAPCD

Chapter 3 - Emission Inventory and Baseline Projections

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PROPOSED 2002 AND 2005 RATE OF PROGRESS PLAN

Other (Solvent Evaporation)	--	--	--	--	--	--	--	--
TOTAL SOLVENT EVAPORATION	107.6	86.0	88.8	88.9	--	--	--	--
MISCELLANEOUS PROCESSES								
Residential Fuel Combustion	0.4	0.5	0.5	0.6	2.9	3.3	3.4	3.5
Livestock Waste	51.4	63.8	68.1	72.0	--	--	--	--
Construction and Demolition	--	--	--	--	--	--	--	--
Paved Road Dust	--	--	--	--	--	--	--	--
Unpaved Road Dust	--	--	--	--	--	--	--	--
Fugitive Windblown Dust	--	--	--	--	--	--	--	--
Fires	0.1	0.1	0.1	0.1	0.0	--	0.0	0.0
Agricultural and Prescribed Burning	12.6	33.9	34.0	34.1	2.8	2.9	3.0	3.0
Utility Equipment	--	--	--	--	--	--	--	--
Cooking	0.3	0.4	0.1	0.5	--	--	--	--

SJVUAPCD

**Chapter 3 - Emission Inventory and
Baseline Projections**

14/17/02

PROPOSED 2002 AND 2005 RATE OF PROGRESS PLAN

Urban Buses	0.29	0.30	0.32	0.31	2.03	2.09	2.09	2.04
Motorcycles	5.34	2.10	2.02	1.94	0.62	0.30	0.35	0.40
TOTAL ON-ROAD MOTOR VEHICLES	224.87	145.55	121.54	100.18	299.97	233.52	215.43	185.95

OTHER MOBILE SOURCES								
Aircraft	11.2	11.0	11.8	12.5	3.4	3.3	3.5	3.7
Trains	0.9	0.8	0.8	0.8	22.7	19.9	17.9	14.2
Ships and Commercial Boats	0.1	0.1	0.1	0.1	0.5	0.3	0.3	0.3
Recreational Boats	21.0	26.4	26.7	23.2	5.0	6.2	6.6	7.8
Off-Road Recreational Vehicles	3.1	2.1	1.5	1.4	0.2	0.3	0.3	0.3
Off-Road Equipment	15.9	13.2	13.4	10.9	57.7	44.1	41.9	38.2
Farm Equipment	13.4	11.6	12.2	9.8	107.1	84.8	77.2	69.5
Fuel Storage and Handling	6.8	7.8	7.3	2.8	--	--	--	--
Other (Other Mobile Sources)	--	--	--	--	--	--	--	--

SJVUAPCD

**Chapter 3 - Emission Inventory and
Baseline Projections**

04/17/02

3-

XL error

Subsystem: KERNEL

Error: IllegalAttribute

Operator: SetBrushSource

Position: 12